

Serial No.: 10/779,530
Office Action Date: 5/31/2005

Filed: 2/14/2004
Amendment Date: 7/20/2005

Amendments to the Drawings:

The attached sheet of drawings includes new FIGS. 1 and 5. These sheets replace the original drawing sheets 1/9 and 7/9, and include FIG. 10, which is unchanged.

Attachment: Replacement Sheets (2)

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REMARKS/ARGUMENTS

This is in response to the Office Action issued on 05/31/2005, with claims 1-15 pending in the Application. Claims 11 and 13 have been amended. There was no claim 10 in the original application. Claims 1-9 and 11-15 remain in consideration.

The Office Action objected to the drawings, stating that specific blocks in Figs. 1 and 5 must be labeled with suitable legends. Corrected drawing sheets are submitted herewith addressing the reasons for the objection. No new matter has been added by the corrected drawing sheets.

Claim Rejections - 35 U.S.C. §112, Second Paragraph

Claims 11-15 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. Claim 11 was rejected, because "said transmission" lacked antecedence. Claim 13 was rejected as being unclear as recited.

Claim 11 has been amended, as above, to provide antecedent basis for the phrase "said transmission". Claim 13 has been amended, as above, to provide clarity. Reconsideration of Claims 11 and 13, and dependent Claims 12, 14, and 15, is respectfully requested.

Claim Rejections - 35 U.S.C. §112, First Paragraph

Claims 1-15 were rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. It was stated that the claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Specifically, with regard to claims 1 and 11, it was stated that the claims utilize a confidence factor in determining whether to inhibit simultaneous application of first and second clutches. The examiner referenced the specification at paragraph 0039, which

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discusses using a look-up table to provide increments to the prior cycle's calculated shift confidence factor CF. The examiner stated that the specification fails to disclose how the prior confidence factor is calculated. It was further stated that it was unclear how the initial or prior confidence factor is arrived at. The examiner argued that one of ordinary skill in the art would have required a description of how to calculate the initial confidence factor in order to increment it, as claimed. The examiner extended the same argument to the "predetermined relationship" recited in claim 8.

Applicants respectfully traverse the examiner's rejection of claims 1, 8 and 11 based upon enablement of one skilled in the art, under 35 U.S.C. §112, first paragraph, to make and/or use the invention. As stated in MPEP §2164.01(a), there are many factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any necessary experimentation is "undue." These factors include, but are not limited to:

- (A) The breadth of the claims;
- (B) The nature of the invention;
- (C) The state of the prior art;
- (D) The level of one of ordinary skill;
- (E) The level of predictability in the art;
- (F) The amount of direction provided by the inventor;
- (G) The existence of working examples; and
- (H) The quantity of experimentation needed to make or use the invention based on the content of the disclosure.

Furthermore, a conclusion of lack of enablement means that, based on the evidence regarding each of the above factors, the specification, at the time the application was filed, would not have taught one skilled in the art how to make and/or use the full scope of the claimed invention without undue experimentation. *In re Wright*, 999 F.2d 1557,1562, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993).

Applicants respectfully argue that the original specification meets the requirements of 35 U.S.C. §112, first paragraph, because it teaches one of ordinary skill in the art how to make and/or use the full scope of the claimed invention without undue experimentation.

It is readily provable that one of ordinary skill in the art knows that calibration of a driveline transmission device is typically necessary to implement such a device in a

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vehicle. (See, e.g., U.S. Patent No. 6,119,072, entitled Calibration Method for Transmission Control Clutches, issued to Eastman, which details calibration of vehicle transmissions.)

Additionally, the specification describes the concerns being addressed by use of a confidence factor, as follows. Referring first to paragraph 0039 of the invention, the overarching concern motivating use of the shift confidence factor in the instant invention comprises operating the electrically variable transmission to avoid unnecessary shift cycling:

As previously described, fixed-ratio comprises synchronous operation of the EVT 10 wherein both clutched C1 and C2 are applied and carrying torque. Transition out of fixed-ratio into either MODE 1 or MODE 2 is accomplished in accordance with a shift confidence factor intended to reduce the incidence of shift cycling back into fixed-ratio. (See Para 0039).

Furthermore, it was stated in paragraph 0038:

Within MODE 1 or MODE 2, input member speed N_i is desirably controlled to a desired input member speed N_{i_des} . Direct coupling of the engine and the input member make the engine speed equivalent to the input member speed and N_{i_des} is equivalent to a desired engine speed. Desired engine speed is provided by the system controller, for example in accordance with a desired operating point of the engine to meet various efficiency and emission objectives.

Applicant respectfully argues that one of ordinary skill in the art related to transmission design and implementation onto vehicles understands that calibration of the transmission is necessary. Applicant asserts that one skilled in the art will recognize how to determine initial shift confidence factor values which optimize engine and transmission operation to reduce incidence of transmission shift cycling while operating the engine at a desired operating point, to meet engine efficiency and emission objectives. Applicant respectfully asserts that one of ordinary skill in the art understands a transmission calibration is typically driven by vehicle design, including mass, inertia, drag coefficient,

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and engine efficiency, which are application-specific. Therefore, one of ordinary skill in the art is able to combine information about a specific engine, vehicle, and transmission to determine initial shift confidence factor values to meet the aforementioned objectives, as stated in the application, and in accordance with the full scope of the invention. Any experimentation related to determining shift confidence factors is necessitated by the specific engine, vehicle, and transmission, and is not undue. In light of the above, applicant respectfully requests reconsideration of any rejection of claims 1-19 and 11-15 under 35 U.S.C. §112, first paragraph.

Conclusion

Based on the above, it is respectfully submitted that all pending claims are in a condition for allowance and that same be allowed to proceed to issue. If the Examiner has any questions regarding the contents of the present response he may contact Applicants' attorney at the phone number appearing below.

Respectfully submitted,



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